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EXAMINER

WOZNIAK, JAMES S

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/980,275	Applicant(s) SERIZAWA ET AL.	
	Examiner James S. Wozniak	Art Unit 2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44, 46-67 and 69-88 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-44, 46-67 and 69-88 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 May 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. In response to the advisory action from 11/2/2007, the applicant has submitted a request for continued examination, filed 12/18/2007, amending independent claims 1, 34, 37, 57-58, 60, 62, and 72-73, while arguing to traverse the art rejection based on the amended limitations of claims 1, 34, and 57 as well as the features of the unamended independent claims (*Amendment, Pages 23-30*). Applicant's arguments have been fully considered, however the previous rejection is maintained due to the reasons listed below in the response to arguments.

2. The applicant has amended claims 57-73 and 84-88 to recite a "computer readable storage medium" and claims 57-58, 60, 62, and 72-73 to recite that the program is "executed by a processor" in order to overcome the previous 35 U.S.C. 101 rejections. In response the examiner notes that while adding "computer readable storage medium" to the claims overcomes the previous 35 U.S.C. 101 rejection with respect to lack of a "computer readable storage medium", upon further consideration, an issue of the previous 35 U.S.C. 101 rejection remains. In the Office Action from 7/19/2007(*Page 3*), it was suggested that the claims be amended to include that the program is executed "by a computer" (*as is supported in the specification on Pages 27-28*) . As the claims currently include a generic processor, which may not be able to read computer readable instructions, and not a "computer" processor, the functionality of a practical application is not realized in the claims. As such, the 35 U.S.C. 101 rejection is maintained.

Also, the specification has been reviewed for the presence of the generic "processor" term. The specification does not utilize such a term and inclusion of said term thus results in an issue of new matter. Although a computer could be understood to inherently contain a *computer* processor, the generic stand alone processor and what is included by such a term is not supported by the specification.

Response to Arguments

3. Applicant's arguments have been fully considered but they are not persuasive for the following reasons:

The applicant first argues that Claims 1-33 are not of means-plus-function format, and therefore, not single means claims (*Amendment, Page 22*). In support of such arguments the applicant points to MPEP 2181. The examiner disagrees with such arguments and the previous 35 U.S.C. 112, first paragraph single means rejection is maintained. As pointed out by the applicant, the claimed invention does not explicitly site the language "means for" (*Amendment, Pages 22-23*), however, the claims do recite a single means (*i.e., element*) not in combination with another element. Also the claimed invention defines each element in terms of its function and not its structure (*for example: "decoding circuit for" (claim 1), "decoding unit which changes" (claim 2), etc.*). See MPEP 2128 ("lever moving element for moving the lever" and "movable link member for holding the lever...and for releasing the lever" were construed as means-plus-function limitations invoking 35 U.S.C. 112, sixth paragraph since the claimed limitations were described in terms of their function not their mechanical structure); *Ethicon*,

Inc. v. United States Surgical Corp., 135 F.3d 1456, 1463, 45 USPQ2d 1545, 1550 (*Fed. Cir.* 1998)). Thus, even though the aforementioned claims do not expressly utilize “means for” language, they are nonetheless means-plus-function claims, and remain rejected under 35 U.S.C. 112, first paragraph.

It is noted, however, that the claimed voice-less unit decoding circuit could be amended to include more of its structure, and thus, obviate this rejection. For example, claim 1 refers to smoothing and synthesizing functions that are performed by smoothing and synthesizing circuits (*see Fig. 10*). If claim 1 were amended to further include that a --voice-less decoding circuit...for decoding...in said voice less period *comprises* a smoothing circuit for smoothing....and a synthesizing circuit for synthesizing....--, the decoding circuit would then be better defined in terms of its structure, and thus, may overcome this rejection. Accordingly, it is recommended this amendment and similar amendments for the other independent claims be considered by the applicant.

The applicant’s arguments with respect to claims 1, 34, and 57 and their dependents (*Amendment, Pages 23-24*) have been fully considered, but are moot with respect to the new grounds of rejection in further view of Hayata (*EP 0751490A2*).

The applicant’s arguments with respect to claims 2, 35, and 58 and their dependents (*Amendment, Pages 24-26*) have been fully considered, but are moot with respect to the new grounds of rejection in further view of Hayata (*EP 0751490A2*).

The applicant’s arguments with respect to claims 4, 37, and 60 and their dependents (*Amendment, Page 27*) have been fully considered, but are moot with respect to the new grounds of rejection in further view of Hayata (*EP 0751490A2*).

The applicant's arguments with respect to claims 6,39, and 62 and their dependents (*Amendment, Page 29-30*) have been fully considered, but are moot with respect to the new grounds of rejection in further view of Hayata (*EP 0751490A2*).

With respect to Claims 20-21, 49-50, and 72-73, the applicant argues that Oshikiri does not teach "determining a weighting coefficient used to generate an excitation signal of the voiceless period by performing a weighted sum operation of plural types of signals" and generating the excitation signal based on the weighting coefficient" (*Amendment, Page 27*). In support of such arguments, the applicant defines that a weighted sum involves the application of different weights to different elements used to generate an excitation (*i.e., "coupling coefficient of the pitch signal, pulse signal, and random signal in the mixing circuit", Amendment, Page 28*). In response, it is noted that the features upon which applicant relies (*i.e., a weighted sum involves the application of different weights to different elements used to generate an excitation (i.e., "coupling coefficient of the pitch signal, pulse signal, and random signal in the mixing circuit", Amendment, Page 28)*) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Although the examiner notes that further defining "weighted sum" as specifically recited by the applicant may differentiate the claimed invention from the teachings of Oshikiri, the presently claimed invention only recites that "a weighting coefficient [is] used in a weighted sum operation". Thus, the broad scope of the claimed invention is anticipated by the Oshikiri reference, which teaches applying a weighting (*smoothed gain*) to a weighted sum (*excitation signal as a sum of a plurality of signal types that is weighted by a gain*) (*Col. 16, Lines 8-39; Col. 20, Lines 7-52;*

Col. 37, Lines 6-23; and Fig. 17). The dependent claim rejections are traversed for reasons similar to the above independent claims (*Amendment, Page 29*). In regards to such arguments, see the above response directed to the corresponding independent claims.

Claim Objections

4. **Claims 48, 62, 69, 71, and 87** are objected to because of the following informalities:

Claims 48 and 71 depend on canceled claims 45 and 68, respectively. It is believed that these claims should be respectively dependent upon claims 37 and 60 and will be considered accordingly for the application of the prior art of record.

In Claim 62, “processor, perform the acts of” should be changed to –processor, *to* perform the acts of--.

The further dependent claims fail to overcome the above noted objections, and thus, are also objected to due to minor informalities.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. **Claims 57-73 and 84-88** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 57-58, 60, 62, and 72-73 are drawn to a “computer executable program” data structure *per se*, not executed by *a computer* capable of reading the computer executable program, thus preventing its functionality from being realized, as recited in the preamble and as such is directed to non-statutory subject matter. See MPEP § 2106.IV.B.1.a.

Data structures not claimed as embodied in computer readable media are descriptive material *per se* and are not statutory because they are not capable of causing functional change in the computer. See, e.g., *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure *per se* held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention, which permit the data structure's functionality to be realized. In contrast, a claimed computer readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory.

Similarly, computer programs claimed as computer listings *per se*, i.e., the descriptions or expressions of the programs are not physical “things.” They are neither computer components nor statutory processes, as they are not “acts” being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer, which permit the computer program's functionality to be realized. Thus, the aforementioned independent claims contain non-statutory subject matter, as do their associated dependent claims.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. **Claims 1-33 and 74-78** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 1 recites “a voice-less decoding circuit for decoding...” but lacks other means that enable the smoothing operation that the unit performs.

Claims 2, 4, 6, and 20-21 recite “a voice-less part decoding unit which changes...” but lacks other means that enable the smoothing operation that the unit performs.

A single means claim, i.e., where a means recitation does not appear in combination with another recited element of means, is subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph. In re Hyatt, 708 F.2d 712, 714-715, 218 USPQ 195, 197 (Fed. Cir. 1983) (A single means claim which covered every conceivable means for achieving the stated purpose was held nonenabling for the scope of the claim because the specification disclosed at most only those means known to the inventor.). When claims depend on a recited property, a fact situation comparable to Hyatt is possible, where the claim covers every conceivable structure (means) for achieving the stated property (result) while the specification discloses at most only those known to the inventor (*See MPEP 2164.08(a)*).

Dependent claims 3, 5, 7-19, 22-33, and 74-78 do not remedy the lack of enablement issue noted above with respect to claims 1-2, 4, 6, and 20-21, and therefore, are also rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement.

9. **Claims 57-73 and 84-88** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. More specifically, claims 57-58, 60, 62, and 72-73 recite that the computer program is executed by a “processor”. The specification does not utilize such the term “processor” and inclusion of said term thus results in an issue of new matter. Although a computer listed on pages 27-28 of the specification could be understood to inherently contain a *computer* processor, the generic stand alone processor and what is included by such a term is not supported by the specification. The further dependent claims do not remedy the lack of written description issue noted above with respect to the independent claims 1, and therefore, are also rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. **Claim 1-33 and 74-78** are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the

elements. See MPEP § 2172.01. The omitted elements in the independent claims are: a means for determining/detecting the presence of a voice-less period because a voice-less period cannot be smoothed/processed unless it has first been identified. The dependent claims fail to overcome the above 112, second paragraph issues, and thus, are also rejected for omitting essential elements.

12. **Claims 34-44, 46-67, 79-88** are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps in the independent claims are: a step for determining/identifying the presence of a voice-less period because a voice-less period cannot be smoothed/processed unless it has first been identified. The dependent claims fail to overcome the above 112, second paragraph issues, and thus, are also rejected for omitting essential steps.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. **Claims 2, 4, 6-7, 11-15, 35, 37, 39-40, 42, 44, 46-48, 74-77, and 80-82**, are rejected under 35 U.S.C. 102(b) as being anticipated by Hayata (*EP 0751490A2*).

With respect to **Claims 2 and 35**, Hayata discloses:

A voice-less part decoding unit which changes, according to an elapsed time from a time point when a transition occurs from the voice period to the voice-less period, a coefficient used to smooth at least one of the feature parameters, and decodes the speech signal in the voice-less period by smoothing at least one of the feature parameters with the changed coefficient (*decoder capable of smoothing a feature parameter in a background noise period and producing synthesized background noise based on a number of counted time frames from a speech-background noise transition, Col. 3, Line 52- Col. 4, Line 26; Col. 5, Lines 26-55; Col. 8, Lines 21-40; and Fig. 1).*

With respect to **Claim 4**, Hayata discloses:

A voice-less part decoding unit which changes a value of a coefficient used to smooth at least one of the feature parameters and decodes the speech signal in the voice-less period by smoothing at least one of the feature parameters with the changed value of the coefficient (*decoder capable of smoothing a feature parameter in a background noise period and producing synthesized background noise based on a coefficient that changes with a number of counted time frames, Col. 3, Line 52- Col. 4, Line 26; Col. 5, Lines 26-55; Col. 8, Lines 21-40; and Fig. 1).*

With respect to **Claim 6, 37, and 39**, Hayata discloses:

A voice-less part decoding unit which changes a value of a coefficient used to smooth at least one of the feature parameters according to information representing whether a new feature parameter is transmitted or not, and decodes the speech signal in the voice-less period by smoothing at least one of the feature parameters with the changed value of the coefficient (*decoder capable of smoothing a feature parameter in a background noise period and producing synthesized background noise based on a coefficient that changes with a number of counted time*

frames and a code string that identifies whether a feature parameter has been sent, Col. 1, Lines 29-55; Col. 3, Line 52- Col. 4, Line 26; Col. 4, Line 54- Col. 5, Line 20; Col. 5, Lines 26-55; Col. 8, Lines 21-40; Col. 9, Lines 25-35; and Fig. 1).

With respect to **Claims 7 and 40**, Hayata further discloses:

The voice-less part decoding unit changes, according to an elapsed time from a time point when a transition occurs from the voice period to the voice-less period and to the feature parameters, a value of a coefficient used to smooth at least one of the feature parameters, and decodes the speech signal in the voice-less period by smoothing at least one of the feature parameters with the changed value of the coefficient (*smoothing parameters change in a background noise period based on a number of counted time frames from a speech-background noise transition, Col. 3, Line 52- Col. 4, Line 26; Col. 5, Lines 26-55; Col. 8, Lines 21-40; and Fig. 1).*

Claims 11-12 and 44 contain subject matter similar to claim 6, and thus, are rejected under similar rationale.

With respect to **Claim 13-15 and 47**, Hayata further discloses:

The voiceless part decoding unit receives information representing whether the feature parameters are sent at a sending location (*code generation at a sending location and received at a receiving location, Col. 1, Lines 29-55; and Col. 4, Line 54- Col. 5, Line 20).*

Claim 42 contains subject matter similar to claim 7, and thus, is rejected under similar rationale.

With respect to **Claim 46 and 48**, Hayata further discloses:

Receiving the information representing whether a new feature is transmitted or not (, *Col. 1, Lines 29-55; and Col. 4, Line 54- Col. 5, Line 20*).

With respect to **Claims 74-77, and 80-82**, Hayata further discloses:

Smoothing in a subsequent period is performed even when a new feature parameter is not received (*smoothing over time as voice inactivity continues, Col. 7, Line 59- Col. 8, Line 4; and Col. 9, Lines 25-35*).

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

16. **Claims 20-21, 26-27, 32-33, 49-50, 55-56, and 72-73** are rejected under 35

U.S.C. 102(e) as being anticipated by Oshikiri et al (*U.S. Patent: 6,202,046*).

With respect to **Claims 20-21, 49-50, and 72-73**, Oshikiri discloses:

A voice-less part decoding unit which generates signals in the voice-less period by feeding an excitation signal composed of plural types of signal to a synthesis filter in the voice less period (*feature parameters, Col. 10, Lines 7-12; and excitation signals in a background noise period fed to a synthesis filter, Col. 20, Lines 7-52; and Fig. 17, Element 411*), wherein the voice-less part decoding unit comprises a weighting coefficient determining unit which determines a weighting coefficient used in a weighted sum operation of the plurality of types of

signals in the voice-less period according to at least one feature parameter (*smoothing gain decoding and modification and weighting of excitation signals in a background noise period, Col. 20, Lines 7-52; and Figs. 17-18, Elements 407-408; and excitation signal generation utilizing an adder, Col. 37, Lines 6-23*), and the excitation signal generated by using the weighting coefficient is fed to the synthesis filter (*Col. 20, Lines 7-52; and Fig. 17*).

Oshikiri further discloses decoding method implementation as a program stored on a computer readable medium (*Col. 37, Line 50- Col. 8, Line 6*).

With respect to **Claims 26-27 and 55-56**, Oshikiri further discloses:

The feature parameters include at least one of a quantity representing spectral envelope of the signals to be decoded and a quantity representing power of the signals to be decoded (*speech feature parameters including power and spectral information, Col. 10, Lines 7-12*).

With respect to **Claims 32-33**, Oshikiri further discloses:

A coding device that determines whether the input signal is in a voice period or in a voice-less period for each frame and encodes the feature parameters of the input signals to output (*encoding means featuring a speech/noise classifier that encodes a classified signal, Col. 19, Lines 29-62*).

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. **Claims 1, 22, 28, 34, 51, 57, 74, 78-79, 83-84, and 88** are rejected under 35 U.S.C.

103(a) as being unpatentable over Oshikiri et al (*U.S. Patent: 6,202,046*) in view of Hayata (*EP 0751490A2*).

With respect to **Claims 1, 34, and 57**, Oshikiri discloses:

A voice-less decoding circuit for decoding the speech signals in said voice-less period by smoothing at least one received parameter related to spectral envelope characteristics, said feature parameter being from the feature parameter being from the feature parameters received in the voice-less period (*smoothing spectral parameters from a classified background noise period at a decoder, Col. 20, Lines 7-52*), and synthesizing said speech signals based on feature parameters for spectral envelope characteristics and said feature parameter for gain (*synthesis filter used to produce a synthesized output based on feature parameters for spectral envelope characteristics and feature parameters for gain, Fig. 17, Elements 409-411*).

Oshikiri further discloses decoding method implementation as a program stored on a computer readable medium (*Col. 37, Line 50- Col. 8, Line 6*).

While Oshikiri discloses a background noise period speech decoding device, method, and program that smoothes a gain value related to spectral envelope characteristics, Oshikiri does not specifically suggest applying smoothing to a feature parameters representing a spectral envelope. Hayata, however, recites a speech decoder featuring a means for smoothing a background noise period by smoothing a coefficient for spectral envelope characteristics (*Col. 5, Lines 21-54*).

Oshikiri and Hayata are analogous art because they are from a similar field of endeavor in smoothing processing in background noise periods. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to combine modify the teachings of Oshikiri with the filter coefficient smoothing taught by Hayata in order to better prevent abrupt noise variations in an output speech signal (*Hayata, Col. 3, Lines 41-45*).

With respect to **Claims 22 and 51**, Oshikiri discloses gain and synthesis filter parameters (*see Fig. 17*).

With respect to **Claim 28**, Oshikiri further discloses:

A coding device that determines whether the input signal is in a voice period or in a voice-less period for each frame and encodes the feature parameters of the input signals to output (*encoding means featuring a speech/noise classifier that encodes a classified signal, Col. 19, Lines 29-62*).

With respect to **Claims 74, 78-79, 83-84, and 88**, Hayata further discloses:

Smoothing in a subsequent period is performed even when a new feature parameter is not received (*smoothing over time as voice inactivity continues, Col. 7, Line 59- Col. 8, Line 4; and Col. 9, Lines 25-35*).

19. **Claim 16** is rejected under 35 U.S.C. 103(a) as being unpatentable over Oshikiri et al in view of Hayata and further in view of Jarvinen et al (*U.S. Patent: 5,960,389*).

With respect to **Claim 16**, Oshikiri in view of Hayata discloses the background noise decoder as applied to Claim 1. Oshikiri in view of Hayata does not specifically suggest that when a length of a voice period immediately before a first voice-less period is shorter than a

predetermined length, a value of a feature parameter which is finally transmitted in a second voice-less period immediately before the voice period is used as an initial value of smoothing. Jarvinen, however recites utilizing a previous noise parameter for smoothing upon the occurrence of a short speech burst (*Col. 21, Lines 16-35; Col. 15, Lines 19-46; and Col. 2, Lines 28-43*).

Oshikiri, Hayata, and Jarvinen are analogous art because they are from a similar field of endeavor in speech coding systems utilizing spectral smoothing. Thus, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the teachings of Oshikiri in view of Hayata with the concept of addressing a short speech burst taught by Jarvinen in order to prevent a speech burst from being misinterpreted as a background noise spike (*Jarvinen, Col. 14, Line 60- Col. 15, Line 3*).

20. **Claims 17-19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayata in view of Jarvinen et al (*U.S. Patent: 5,960,389*).

With respect to **Claims 17-19**, Hayata discloses the background noise decoder as applied to Claims 2, 4, and 6. Hayata does not specifically suggest that when a length of a voice period immediately before a first voice-less period is shorter than a predetermined length, a value of a feature parameter which is finally transmitted in a second voice-less period immediately before the voice period is used as an initial value of smoothing. Jarvinen, however recites utilizing a previous noise parameter for smoothing upon the occurrence of a short speech burst (*Col. 21, Lines 16-35; Col. 15, Lines 19-46; and Col. 2, Lines 28-43*).

Hayata and Jarvinen are analogous art because they are from a similar field of endeavor in speech coding systems utilizing spectral smoothing. Thus, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the teachings of Hayata with the concept of addressing a short speech burst taught by Jarvinen in order to prevent a speech burst from being misinterpreted as a background noise spike (*Jarvinen*, Col. 14, Line 60- Col. 15, Line 3).

21. **Claims 3, 5, 8-10, 23-25, 29-31, 36, 38, 41, 43, 52-54, 58-67, 69-71, and 85-87** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayata (*EP 0751490A2*) in view of Oshikiri et al (*U.S. Patent: 6,202,046*).

With respect to **Claim 58**, Hayata discloses the voice-less decoding method as applied to claim 35. Hayata does not specifically suggest method implementation as a computer readable medium storing a program executed by a computer. Oshikiri, however, discloses that a decoding operation is performed with by a computer reading/executing a readable medium storing a program (*Col. 37, Line 50- Col. 8, Line 6*).

Hayata and Oshikiri are analogous art because they are from a similar field of endeavor in smoothing processing in background noise periods. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to combine modify the teachings of Hayata with the method implementation as a computer readable medium storing a program executed by a computer taught by Oshikiri in order to enable decoding processing to be performed using a general personal computer (*Oshikiri*, Col. 38, Lines 3-6).

With respect to **Claims 3, 36, and 59**, Hayata discloses the voice-less decoding method/system featuring a voice determination unit (*Fig. 1, Element 102*), as applied to claims 3, 35, and 58. Hayata does not specifically suggest a time period immediately following a voice/voice-less transition period in which feature parameters are decoded as speech before a background noise period is declared, however, Oshikiri further discloses passing features through smoothing processing during a hangover period and performing smoothing processing after a hangover period has elapsed for preventing speech to be mistaken as noise at the end of a speech period (*Col. 16, Lines 8-39; Col. 20, Lines 7-52; and Fig. 17*).

Claim 63 contains subject matter similar to claim 7, and thus, is rejected under similar rationale.

Claims 8, 41, and 64-65 contain subject matter similar to claims 3 and 7, and thus, is rejected under similar rationale.

With respect to **Claims 10, 43, and 66**, Oshikiri further recites:

The voice-less part decoding unit decodes the speech signal by using at least one of the received feature parameters as it is, in a first time period immediately after changing from the voice period to the voice-less period and in a second time period while the feature parameter satisfies a predetermined condition, and decodes the speech signal by using at least one smoothed feature parameter selected from the feature parameters after the first time period or the second time period is past (*passing features through smoothing processing during a hangover period and a subsequent detected speech period that follows a background noise period; and performing smoothing processing hangover periods have elapsed, Col. 16, Lines 8-39; Col. 20, Lines 7-52; and Fig. 17*).

Claims 23-25 contains subject matter similar to claim 22, and thus, is rejected for similar reasons. Also, Hayata discloses spectral envelope parameters, as applied to claim 2.

Claims 29-31 and 52-54 contain subject matter similar to claim 28, and thus, is rejected for similar reasons.

With respect to **Claims 85**, Hayata further discloses:

Smoothing in a subsequent period is performed even when a new feature parameter is not received (*smoothing over time as voice inactivity continues, Col. 7, Line 59- Col. 8, Line 4; and Col. 9, Lines 25-35*).

Claims 5 and 38 contain subject matter similar to Claim 3, and thus, is rejected under similar rationale.

Claim 9 contains subject matter similar to claim 3, and thus, is rejected under similar rationale.

Claim 60, 62, 67, and 70 contain subject matter similar to Claims 37, 39, 47, and 58, and thus, are rejected under similar rationale.

Claim 61 contains subject matter similar to claim 3, and thus, is rejected under similar rationale.

Claims 69 and 71 contain subject matter similar to claim 46, and thus, are rejected under similar rationale.

Claims 86-87 contain subject matter similar to claims 85, and thus, are rejected under similar rationale.

Conclusion

22. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: See PTO-892.

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Wozniak whose telephone number is (571) 272-7632. The examiner can normally be reached on M-Th, 7:30-5:00, F, 7:30-4, Off Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached at (571) 272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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